Developing Advanced Models of Nuclear Preinitiation for NEST Render-Safe Exercises

Anna C. Hayes, T-16; and
Gerard Jungman, T-6

A proliferant or terrorist nuclear device is likely to be less robust and to be designed for use with nonoptimal materials such as reactor-grade plutonium. In particular, preinitiation is a concern in any predetonation interaction with such devices. Therefore, the Los Alamos National Laboratory (LANL) Nuclear Emergency Search Team (NEST) requires accurate models for preinitiation of such devices. Such models depend on accurate nuclear data as well as physical modeling of the preinitiation chain reaction.

Fig. 1.
LANL NEST exercise.

In collaboration with T. Hill (X-2) and T. Liu [formerly T-6, currently Lawrence Livermore National Laboratory (LLNL)], we are developing advanced models for preinitiation. This includes improved nuclear data and support for code development efforts.

For more information contact Anna C. Hayes at anna_hayes@lanl.gov.

Funding Acknowledgements
Department of Energy (DOE) Office of Research and Engineering (NA22).